MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT
AIR QUALITY DIVISION
OPERATION AND MAINTENANCE (O&M) PLAN

SAMPLE

All numeric values specified in this document are examples only. Site and device specific values and limits must be substituted for sample values listed in this document.

ATTACHMENT 1

SECTION I: GENERAL INFORMATION

Business Name/Address: ABC, Inc.
Semiconductor Division
1000 E. *Street Name*
Phoenix, AZ 85000
Maildrop: 123

Equipment Identification: POU #1 through #5

Facility Permit Number: 010000

Preparation Date: June 29, 2001

Revision Number: 7

General Description of Overall Facility Operations:

The facility contains semiconductor manufacturing including, plasma etching, wet acid/base etching, epitaxial and chemical vapor deposition, photolithography, coating and developing, and diffusion. In addition to production processes, the facility operates natural gas fired boilers and fuel oil fired emergency powered generators, centralized and point-of-use air emission abatement devices, and cooling towers. Research and development operations are also maintained at this facility which includes semiconductor type processes on a smaller scale.

It is recommended that each type of POU abatement technology has its own O&M Plan.

Brief Description of Process(es) Ducted to Point of Use(s) Including Pollutants Emitted:

Process	Pollutants Emitted
Etching	*Hydrogen Chloride, Chlorine, others (specify)*
Deposition	*Arsine, Phosphine, others (specify*)
Doping	*Arsine, Phosphine, others (specify*)

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Complete Description of Point of Use Devices (include model and manufacturer) Covered by this Plan :

Equipment ID #	Total # of Identical Units	Equipment Description	Manufacturer and Model No.	Example Rated Capacity (cfm, btu/hr, etc..)
POU #1 through #5	5	Etch Water Scrubber	ATMI Vector Ultra	50 cfm

SECTION II: OPERATION PLAN

Operating Parameters to be Monitored:

(Please note that the initial operational limits and monitoring frequency will be in accordance with manufacturer's recommendations. After initial start-up the source may determine that best practices operating parameters differ from manufacturer's recommendations. In that case, with approval from MCESD, the source may adopt best practices operating limits and monitoring frequency through submittal or a revised O&M Plan)

For POU Water Scrubber: Vector Ultra

Operating Parameter	Example Limits (Min/Max Values)	Instrument Type and Range	Example Monitoring Frequency
Water Recirculation	Minimum 35gpm	Paddle wheel; 0-100 gpm	Weekly
Pressure Drop (Optional)	0.2-2.0" H20	Setra pressure transducer; 0-10 inches	Weekly
Nozzle Spray Pattern	Visual Inspection	NA	Weekly

For POU Oxidation/Combustion: CDO 859

Operating Parameter	Example Limits (Min/Max Values)	Instrument Type and Range	Example Monitoring Frequency
Temperature	Minimum 800° C	Thermocouple; 0-1000° C	Weekly

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For POU Cold Bed Reactor: Novapure 237

Operating Parameter	Example Limits (Min/Max Values)	Instrument Type and Range	Example Monitoring Frequency
Outlet Concentration	Maximum 1 ppm	ATMI MST 0-10 ppm	Weekly
Pressure Drop (Optional)	0.25-2.0" H2O	Setra pressure transducer; 0-10 inches	Weekly

For POU Hot Bed Reactor: Edwards GRC

Operating Parameter	Limits (Min/Max Values)	Instrument Type and Range	Example Monitoring Frequency
Outlet Concentration	Maximum 1 ppm	ATMI MST 0-10 ppm	Weekly
Temperature	Minimum 400° C	Thermocouple; 0-1000° C	Weekly
Pressure Drop (optional)	0.25-2.0" H20	Setra pressure transducer; 0-10 inches	Weekly

For POU Plasma Reactor: ETC Dry Scrub

Operating Parameter	Example Limits (Min/Max Values)	Instrument Type and Range	Example Monitoring Frequency
Power	Minimum 1200 Watts	0-2000 Watts	Weekly
Accumulation Amount	Visual Inspection	NA	Weekly

Methods of Recording Operating Parameters:

Operating parameters will be recorded in a log sheet (see attached sample log sheet) or electronically trended. Records will be retained for five years, as required by MCESD.

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SECTION III: MAINTENANCE PLAN

Maintenance Items to be Checked:

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For POU Water Scrubber: Vector Ultra

Items to be Checked	Example Maintenance Procedures	Example Frequency
Pump, nozzles and liquid distribution	Inspect and Service as Necessary	Quarterly

For POU Oxidation/Combustion: CDO 859

Items to be Checked	Example Maintenance Procedures	Example Frequency
Oxidation chamber	Inspect and Service as Necessary	Quarterly

For POU Cold Bed Reactor: Novapure 237

Items to be Checked	Example Maintenance Procedures	Example Frequency
Adsorption Media	Replace if necessary	Annually

For POU Hot Bed Reactor: Edwards GRC

Items to be Checked	Example Maintenance Procedures	Example Frequency
Adsorption Media	Replace if necessary	Annually

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For POU Plasma Reactor: ETC Dry Scrub

Items to be Checked	Example Maintenance Procedures	Example Frequency
Reactor	Inspect and Replace as Necessary	Quarterly
Particle Collector	Inspect and Replace as Necessary	Quarterly

Methods of Recording Maintenance Procedures:

Work orders or maintenance log sheets will be completed and signed by maintenance personnel. Maintenance on this equipment will include, at a minimum, those items specified in this plan. Records will be retained for five years, as required by MCESD.